Lower Colorado River Multi-Species Conservation Program

Balancing Resource Use and Conservation

Cibola Valley Conservation Area

2016 Annual Report

October 2018

Work conducted under LCR MSCP Work Task E5

Lower Colorado River Multi-Species Conservation Program Steering Committee Members

Federal Participant Group

Bureau of Reclamation
U.S. Fish and Wildlife Service
National Park Service
Bureau of Land Management
Bureau of Indian Affairs
Western Area Power Administration

Arizona Participant Group

Arizona Department of Water Resources
Arizona Electric Power Cooperative, Inc.
Arizona Game and Fish Department
Arizona Power Authority
Central Arizona Water Conservation District
Cibola Valley Irrigation and Drainage District
City of Bullhead City
City of Lake Havasu City
City of Mesa
City of Somerton
City of Yuma
Electrical District No. 3, Pinal County, Arizona
Golden Shores Water Conservation District
Mohave County Water Authority
Mohave Valley Irrigation and Drainage District
Mohave Water Conservation District
North Gila Valley Irrigation and Drainage District
Town of Fredonia
Town of Thatcher
Town of Wickenburg
Salt River Project Agricultural Improvement and Power District
Unit "B" Irrigation and Drainage District
Wellton-Mohawk Irrigation and Drainage District
Yuma County Water Users' Association
Yuma Irrigation District
Yuma Mesa Irrigation and Drainage District

Other Interested Parties Participant Group

QuadState Local Governments Authority
Desert Wildlife Unlimited

California Participant Group

California Department of Fish and Wildlife
City of Needles
Coachella Valley Water District
Colorado River Board of California
Bard Water District
Imperial Irrigation District
Los Angeles Department of Water and Power
Palo Verde Irrigation District
San Diego County Water Authority
Southern California Edison Company
Southern California Public Power Authority
The Metropolitan Water District of Southern California

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Colorado River Commission of Nevada
Nevada Department of Wildlife
Southern Nevada Water Authority
Colorado River Commission Power Users
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Native American Participant Group

Hualapai Tribe
Colorado River Indian Tribes
Chemehuevi Indian Tribe

Conservation Participant Group

Ducks Unlimited
Lower Colorado River RC&D Area, Inc.
The Nature Conservancy

Lower Colorado River
Multi-Species Conservation Program

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Lower Colorado River
Multi-Species Conservation Program
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ACRONYMS AND ABBREVIATIONS

AGFD	Arizona Game and Fish Department
CVCA	Cibola Valley Conservation Area
FY	fiscal year
HCP	Habitat Conservation Plan
LCR MSCP	Lower Colorado River Multi-Species Conservation Program
lidar	light detection and ranging
MCWA	Mohave County Water Authority
Reclamation	Bureau of Reclamation

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1.0 INTRODUCTION

The purpose of this annual report is to summarize all activities that have occurred at the Cibola Valley Conservation Area (CVCA) from October 1, 2015, through September 30, 2016, which is Federal fiscal year (FY) 2016. Water usage is presented for the calendar year, January 1 through December 31, 2016, consistent with the Colorado River Accounting and Water Use Report: Arizona, California, and Nevada, Calendar Year 2016 (Bureau of Reclamation [Reclamation] 2017).

1.1 Background

In 2002, Reclamation secured 1,309 acres of land within the Cibola Valley Irrigation and Drainage District in southwestern Arizona and established the CVCA. In September 2007, the property was conveyed to the Arizona Game and Fish Department (AGFD) through an agreement among the AGFD, Reclamation, the Mohave County Water Authority (MCWA), the Hopi Tribe, and The Conservation Fund. Under the agreement, the AGFD retains title to the property and leases the land and water rights to Reclamation until April 5, 2055, as part of the Lower Colorado River Multi-Species Conservation Program (LCR MSCP). In September 2008, a Memorandum of Understanding was signed between Reclamation and the AGFD that assures availability of land and water resources for the 50-year term of the LCR MSCP. Large habitat conservation areas such as the CVCA are developed over a number of years, with restoration activities divided into phases.

2.0 CONSERVATION AREA INFORMATION

2.1 Purpose

The Fremont cottonwood-Goodding's willow (*Populus fremontii-Salix gooddingii*) (hereafter cottonwood-willow) and honey mesquite (*Prosopis glandulosa*) land cover types created within the CVCA will be managed for southwestern willow flycatchers (*Empidonax traillii extimus*), yellow-billed cuckoos (*Coccyzus americanus occidentalis*), and other species covered under the LCR MSCP.

2.2 Location

The CVCA is located in Arizona in Reach 4, within the Cibola Valley Irrigation District, approximately 15 miles south of Blythe, California. It is within the historic flood plain of the lower Colorado River and adjacent to River Miles 99 to 105 on the Arizona side (figure 1).

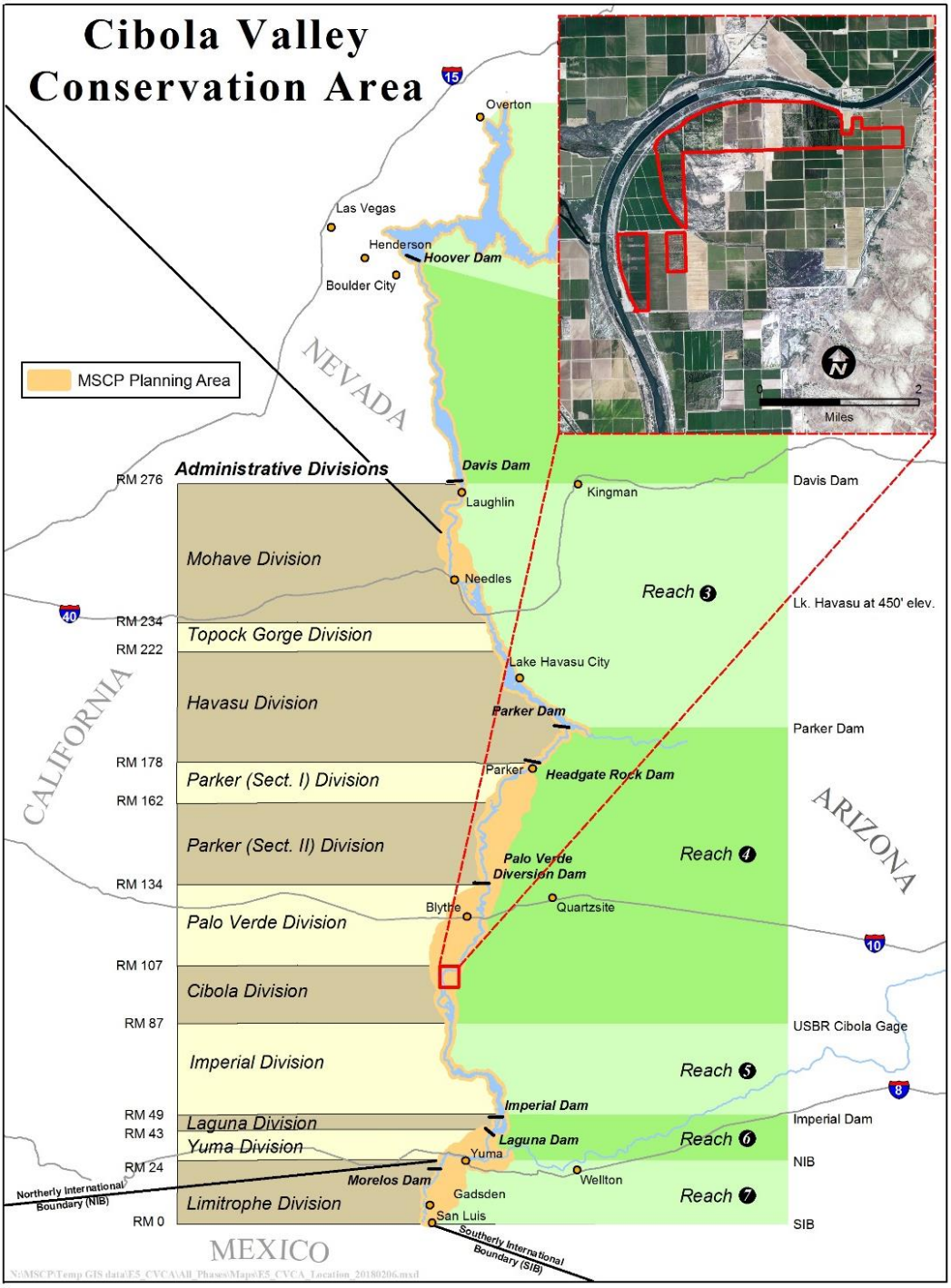


Figure 1.—Location of the CVCA.

2.3 Landownership

The AGFD acquired CVCA land and water rights in 2007 and 2008 through multiple agreements involving the AGFD, Reclamation, the MCWA, The Conservation Fund, and the Hopi Tribe. Through these agreements, the AGFD acquired CVCA fee title and water entitlements and agreed to manage the site. The entitlements are subject to an existing long-term lease of the land and water rights to Reclamation through April 5, 2055, as part of the LCR MSCP. Short-term leases of the land to farmers for crop production also exist on portions of the acquired land.

2.4 Water

For the long term, a 2,838-acre-foot-per-year diversionary right of 4th priority Colorado River water is available (table 1). Additionally, a 7,747 acre-foot diversionary right of combined 4th, 5th, and 6th priority Colorado River water is currently available for lease each year from the MCWA to the LCR MSCP to accommodate the higher water diversions required to establish habitat.

Table 1.—Water entitlement and priority

Term	Entitlement	Priority
Long term		
AGFD entitlement	2,719 acre-feet/year	4th
Reclamation entitlement	119 acre-feet/year	4th
Long-term total	**2,838 acre-feet/year**	
Short term		
Multi-year lease from MCWA entitlement	5,997 acre-feet/year	4th
Multi-year lease from MCWA entitlement	750 acre-feet/year	5th
Multi-year lease from MCWA entitlement	1,000 acre-feet/year	6th
Short-term total	**7,747 acre-feet/year**	

2.5 Agreements

A Land Use Agreement was signed in 2007 by Reclamation and the AGFD to secure land and water for the CVCA for the remainder of the 50-year LCR MSCP. The agreement outlines the rights and responsibilities of each partner in the project's development and maintenance.

2.6 Public Use

The AGFD has the authority, and is the lead, to regulate hunting and recreation uses pursuant to AGFD statutes, regulations, and policies at the CVCA. In cooperation with Reclamation, the AGFD coordinates its public use and related activities so they are compatible with management of the site for the LCR MSCP. Low-impact public uses, such as wildlife watching, sport fishing, and education/ outreach, are expected at the CVCA; however, these uses may be regulated depending on future occupation of the habitat by listed species.

2.7 Law Enforcement

The AGFD is responsible for law enforcement at the CVCA. A LCR MSCP Conservation Area Specific Fire Management & Law Enforcement Strategy was finalized for the CVCA (LCR MSCP 2010).

2.8 Wildfire Management

A LCR MSCP Conservation Area Specific Fire Management & Law Enforcement Strategy has been finalized for the CVCA (LCR MSCP 2010). The LCR MSCP will continue to work with local State and Federal fire agencies to reduce the risk of wildland fires and to maintain clear lines of communication among agencies.

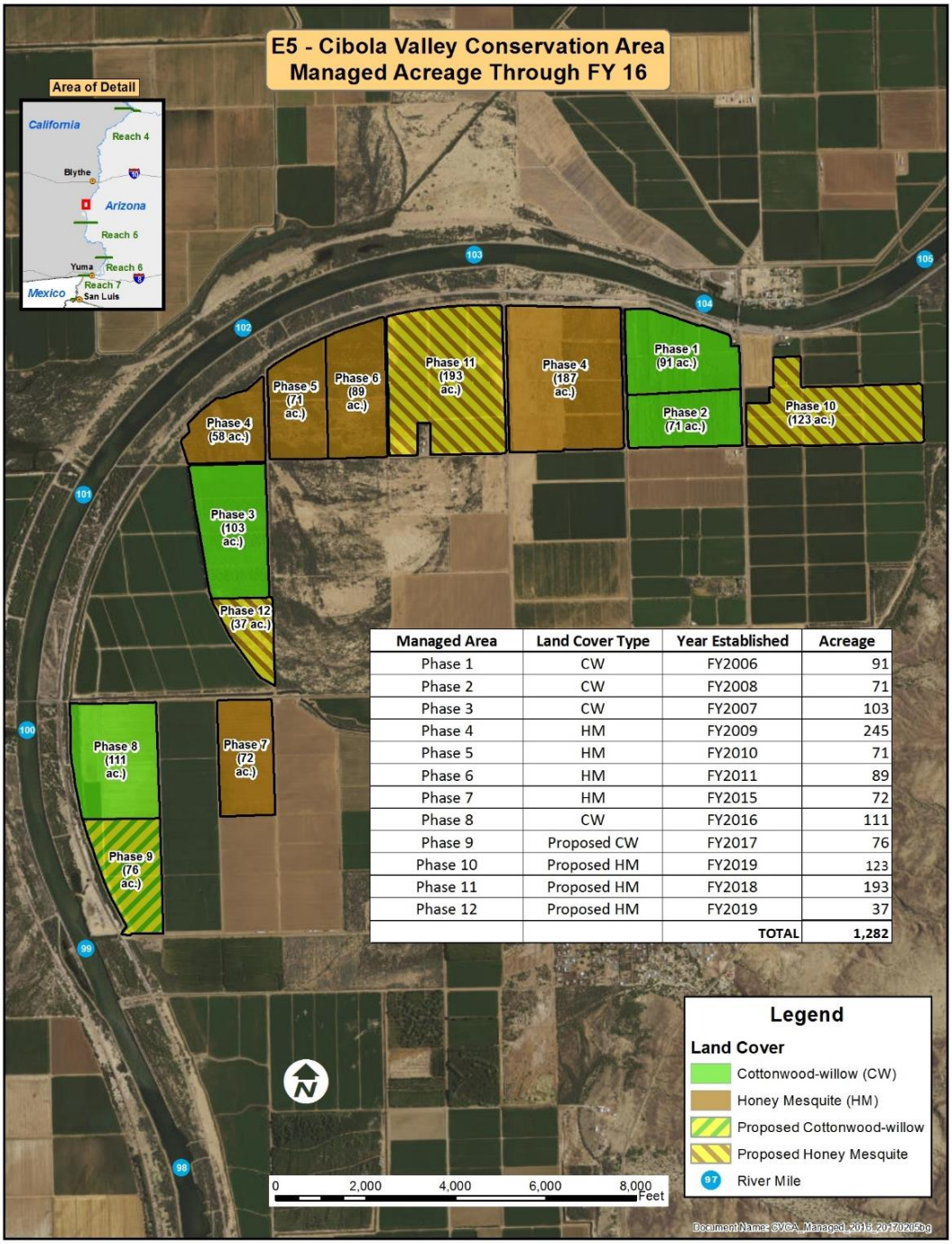
In FY16, a 30- to- 40-acre fire occurred in March within Phase 1 and was contained by the following day. Damage was minimal, and no replanting is anticipated.

3.0 HABITAT DEVELOPMENT

Figure 2 shows the established land cover types that are being managed for LCR MSCP covered species.

3.1 Planting

During FY16, restoration activities at the CVCA consisted of irrigation, maintenance, monitoring activities, and the planting of Phase 8. Honey mesquite trees previously planted in Phases 4, 5, and 6 have established to the point where irrigation is no longer needed, and any future irrigation of these phases will only occur on an as-needed basis. In preparation of planting in FY17, Phase 9 was also planted with winter wheat for ground stabilization.



Managed Area	Land Cover Type	Year Established	Acreage
Phase 1	CW	FY2006	91
Phase 2	CW	FY2008	71
Phase 3	CW	FY2007	103
Phase 4	HM	FY2009	245
Phase 5	HM	FY2010	71
Phase 6	HM	FY2011	89
Phase 7	HM	FY2015	72
Phase 8	CW	FY2016	111
Phase 9	Proposed CW	FY2017	76
Phase 10	Proposed HM	FY2019	123
Phase 11	Proposed HM	FY2018	193
Phase 12	Proposed HM	FY2019	37
		TOTAL	1,282

Figure 2.—CVCA managed acreage through FY16.

Phase 8 was planted using a mosaic planting approach. The phase was divided into checks and planted with high- or low-density cottonwood-willow and honey mesquite (figure 3). Planting included 7 species and over 160,000 plants. Planting occurred in March and April and included hand planting and the use of a mass transplanter. The areas planted with honey mesquite are in east-west furrows with moderate sinuosity to reduce the amount of irrigation needed by funneling the water directly to the trees as opposed to flooding the entire field. The mesquite furrows can be blocked off from diverted water after about 2 years, when the mesquite establish, to further reduce water use. Future planting of phases within the CVCA will continue through FY19 based on the current plan.

3.2 Irrigation

Flood irrigation methods are used to provide water to each field. Irrigation amounts applied in each phase were based on monthly invoices prepared by the Cibola Valley Irrigation and Drainage District. Irrigation scheduling was recommended by the contract farmer along with input from Reclamation. The total irrigation amount used at the CVCA for calendar year 2016 was 2,606.4 acre-feet.

3.3 Site Management

Normal road maintenance, such as watering, grading, and gravel road base replacement, was completed as needed.

3.3.1 Weed Management

Invasive weeds and plant material adjacent to the irrigation canals were removed to protect the integrity of the concrete lining. Disking was done quarterly along the levee road and extended 50 feet into the fields to reduce the risk of fire. Disking was also conducted between the furrows in Phase 7 because of the increased presence of invasive species including goathead (*Tribulus terrestris*) and pigweed (*Amaranthus* spp.). Invasive species were also treated with herbicide in the furrows.

3.3.2 Nursery Management

Coyote willow (*Salix exigua*) poles were collected from the nursery.

Figure 3.—CVCA Phase 8 as built.

4.0 MONITORING

4.1 Avian Monitoring

Avian monitoring in FY16 included surveys for southwestern willow flycatchers, yellow-billed cuckoos, and riparian breeding birds.

4.1.1 Southwestern Willow Flycatcher Surveys

Surveys to detect the presence of southwestern willow flycatchers were conducted five times during FY16 in cottonwood-willow habitat. No breeding or resident southwestern willow flycatchers were detected. Migrant willow flycatchers (*Empidonax trailli*) were detected in June and July. Most birds detected after June 24 or individuals detected repeatedly before June 24 are considered to be southwestern willow flycatchers. Birds detected before June 24 and those detected only once after June 24 are considered migrant willow flycatchers (McLeod and Pellegrini 2017).

4.1.2 Yellow-billed Cuckoo Surveys

Four surveys for yellow-billed cuckoos were conducted within the riparian portion of the CVCA. Eight cuckoo were detected during the first survey period (June 15–30). Two surveys are conducted during the second survey period (approximately July 1–31) and resulted in 13 detections. Between approximately August 1–15, there was one detection.

Breeding was confirmed at the CVCA in FY16. Due to the behavior of this species, detections alone do not indicate the number of cuckoos present, nor do detections confirm breeding. The number, timing, and location of detections, along with behaviors observed, may be used to estimate abundance, distribution, and/or breeding status. The possible, probable, and confirmed counts were used to estimate the number of breeding territories and not the number of breeding pairs. Territory estimates represented two adults associated with a single nest. There were four possible, one probable, and one confirmed territory at the CVCA in FY16. One nest was found incidental to surveys (Parametrix, Inc., and Southern Sierra Research Station 2016).

4.1.3 General Bird Surveys

Bird surveys were conducted to detect breeding LCR MSCP riparian bird species and other territorial riparian bird species. Surveys were conducted within areas of the cottonwood-willow and honey mesquite land cover types that were of adequate growth to support breeding birds. General bird surveys resulted in the detection of 20 species (218.75 territories) of birds breeding within the surveyed

plots. Sonoran yellow warblers (
and summer tanagers (*Piranga rubra*) were confirmed breeding (Great Basin Bird Observatory 2017).

Table 2 shows the number of breeding territories of LCR MSCP covered species at the CVCA in FY16 (Great Basin Bird Observatory 2017).

Table 2.—Number of breeding territories per LCR MSCP covered species[1] at the CVCA, FY16

LCR MSCP covered species	Number of confirmed breeding pairs
Sonoran yellow warbler	2.5
Summer tanager	1.0

[1] Number of breeding territories refers to the number of territories that are within the sampled area for pairs that were confirmed breeding. Partial territories are possible, as the amount of each territory within the sampled area was estimated to 0.25, 0.5, 0.75, or 1.0.

4.2 Small Mammal Monitoring

4.2.1 Bat Monitoring

Acoustic and capture survey methods were used to monitor bats in order to document the presence of species using the conservation area and to determine the age, sex, and reproductive status of bats that were captured.

4.2.1.1 Acoustic Surveys

Two long-term monitoring stations were operated during June, July, and August 2016. Western red bats (*Lasiurus blossevillii*) and western yellow bats (*Lasiurus xanthinus*) were detected. Table 3 summarizes the total number of nights the four LCR MSCP species were detected in FY16 (Mixan and Diamond, *in press*).

4.2.1.2 Capture Surveys

Bats were captured with mist nets at the CVCA1 night per month from June to August 2016. Two California leaf-nosed bats (*Macrotus californicus*), six western red bats, and two western yellow bats were captured (Hill 2018b).

Table 3.—LCR MSCP bat detections by month at the two CVCA long-term monitoring stations, FY16

Month	Number of nights recorded (CVCA1/ CVCA2)	Total nights detected							
		Western red bat		Western yellow bat		California leaf-nosed bat		Pale Townsend's big-eared bat[1]	
		CVCA1	CVCA2	CVCA1	CVCA2	CVCA1	CVCA2	CVCA1	CVCA2
June	30	10	2	25	1	0	0	0	0
July	31	23	7	30	12	0	0	0	0
August	31	7	5	29	7	0	0	0	0

[1] Genetic analyses on the pale Townsend's big-eared bat indicate that the lower Colorado River is likely in the range of the Pacific Townsend's big-eared bat (*Corynorhinus townsendii townsendii*) rather than the pale Townsend's big-eared bat (Piaggio and Perkins 2005). The bats recorded along the lower Colorado River will be referred to as pale Townsend's big-eared bats in this report, as the nomenclature change has not yet been verified by U.S. Fish and Wildlife Service.

4.2.2 Rodent Monitoring

Live trapping was conducted on March 2, 2016, to determine the presence of covered rodent species. Sixty traps were set on transects in Phases 2, 3, and 4. One Colorado River cotton rat (*Sigmodon arizonae plenus*) and two desert pocket mice (*Chaetodipus penicillatus*) were captured. The subspecies of the desert pocket mice was not determined, but they are not expected to be the *sobrinus* subspecies, as the CVCA is south of the subspecies' documented range. (Hill 2017, 2018a).

4.3 MacNeill's Sootywing Skipper Monitoring

Surveys for MacNeill's sootywing skippers (*Pholisora gracielae* = *Hesperopsis gracielae* [MacNeill]) were conducted in March and July 2016. MacNeill's sootywing skippers were documented in Phase 4 of the CVCA (Hill 2016).

5.0 HABITAT CREATION AND CONSERVATION MEASURE ACCOMPLISHMENT

5.1 Vegetation Monitoring

Vegetation data were collected in FY16 using light detection and ranging (lidar). Lidar measures the vegetation structure throughout the canopy and provides the ability to identify structural diversity and successional growth stages. Conservation area vegetation will be evaluated on a periodic basis using lidar to ensure the habitat is meeting species' requirements. A procedure to analyze and provide vegetation structure metrics will be developed, and the results will be presented in future reports.

5.2 Evaluation of the CVCA

The Final Habitat Creation Conservation Measure Accomplishment Tracking Process was finalized in October 2011 (LCR MSCP 2011). All areas within the CVCA were designed to benefit covered species at the landscape level.

To meet species habitat creation requirements, the Habitat Conservation Plan (HCP) provides goals for habitat creation based on land cover types. These land cover types are described using the Anderson and Ohmart vegetation classification system (Anderson et al. 1976, 1984a, 1984b). A total of 13 species with habitat creation goals have creditable acres at the CVCA. These species, including their corresponding conservation measure acronyms, are: southwestern willow flycatcher (WIFL1), western red bat (WRBA2), western yellow bat (WYBA3), Colorado River cotton rat (CRCR2), yellow-billed cuckoo (YBCU1), elf owl (*Micrathene whitneyi*) (ELOW1), gilded flicker (*Colaptes chrysoides*) (GIFL1), Gila woodpecker (*Melanerpes uropygialis*) (GIWO1), vermilion flycatcher (*Pyrocephalus rubinus*) (VEFL1), Arizona Bell's vireo (*Vireo bellii arizonae*) (BEVI1), Sonoran yellow warbler (YWAR1), summer tanager (SUTA1), and MacNeill's sootywing skipper (MNSW2) (table 4).

Table 4.—Species-specific habitat creation conservation measure total acres for 2016

Species-specific habitat creation conservation measure	WIFL1	WRBA2	WYBA3	CRCR2	YBCU1	ELOW1	GIFL1	GIWO1	VEFL1	BEVI1	YWAR1	SUTA1	MNSW2
Creditable acres in 2016	0[1]	0	0	0	0	0	0	0	0	0	0	0	0
Total, including previous years	0	670	670	670	265	670	265	265	670	670	265	265	405

[1] Although the CVCA provides the appropriate structure type (cottonwood-willow I–IV) as defined in WIFL1 of the HCP, Reclamation is in the process of gathering the appropriate hydrologic data to determine saturated soils, moist soils, or slow-moving water. Once this has been determined, the CVCA will be evaluated.

6.0 ADAPTIVE MANAGEMENT RECOMMENDATIONS

Adaptive management relies on the initial receipt of new information, the analysis of that information, and the incorporation of the new information into the design and/or direction of future project work (LCR MSCP 2007). The Adaptive Management Program's role is to ensure habitat creation sites are biologically effective and fulfill the conservation measures outlined in the HCP for 26 covered species and if they potentially benefit 5 evaluation species. Post-development monitoring and species research results will be used to adaptively manage habitat creation sites after initial implementation. Once monitoring data are collected

over a few years, and then analyzed for the CVCA, recommendations may be made through the adaptive management process for site improvements in the future.

There are no adaptive management recommendations for the CVCA at this time.

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